



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/540,026

01/25/2006

Bertram Sugg

R.304045

8866

2119 7590 04/23/2009  
RONALD E. GREIGG  
GREIGG & GREIGG P.L.L.C.  
1423 POWHATAN STREET, UNIT ONE  
ALEXANDRIA, VA 22314

EXAMINER

GORDON, BRYAN P

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

04/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,026	<b>Applicant(s)</b> SUGG, BERTRAM	
	<b>Examiner</b> BRYAN P. GORDON	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-10, 13-14 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 10, 13, 14 and 29-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-10, 13-14 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Schreiner (PG Pub 20020175591).
3. Considering claim 9, Schreiner teaches (Figures 1 + 3) a piezoelectric actuator (1), having a multi-layered construction of piezoelectric layers (2) interleaved with inner electrodes (3) and having an alternating contacting of the inner electrodes with outer electrodes (4,5) the regions between the outer electrodes being provided with an insulation layer (17) comprised of the same ceramic material as the piezoelectric layers and thus having the same properties as the piezoelectric layers themselves and the insulating layer being applied to the outer surface of the piezoelectric actuator (abstract + paragraph 0006).
4. Considering claim 10, Schreiner teaches the insulating layer enclosing the edges of the piezoelectric actuator (paragraph 0006).
5. Considering claim 13, Schreiner teaches the outer electrodes being attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

Art Unit: 2834

6. Considering claim 14, Schreiner teaches the outer electrodes being attached to regions of the insulating material that have been uncovered by grinding (paragraph 0006).

7. Considering claim 29, Schreiner (Figures 1 + 3) teaches an apparatus made by the following steps, providing a piezoelectric stack having alternating layers of piezoelectric material and inner electrodes (3). The method of coating the outside of the stack before sintering is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

8. Considering claim 30, Schreiner teaches the piezoelectric stack is coated with the same material as is used as the piezoelectric material. The method of sintering the device so it becomes hard, smooth and impervious is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

9. Considering claim 31, the method of removing portions of the sintered coating is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given patentable weight. Furthermore, if the applicant still disagrees with this Schreiner teaches removing portions of the sintered coating (paragraph 0023).

10. Considering claim 32, Schreiner (Figure 1) teaches outer electrodes to the area which has had the coating removed in a manner such that the outer electrodes (5) make appropriate contact with the inner electrodes (3). Whether or not the portions were removed after being sintered is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

***Response to Arguments***

11. Applicant's arguments see pages 5-8, filed 04 March 2009, with respect to the new matter rejection have been fully considered and are persuasive. The objection of the specification has been withdrawn.

12. Applicant's arguments see pages 5-8, filed 04 March 2009, with respect to 112 rejection have been fully considered and are persuasive. The rejection of claims 29-32 has been withdrawn.

13. Applicant's arguments filed 03 March 2009 have been fully considered but they are not persuasive. Regarding claim 9, the applicant argues that the insulation added before the sintering process should be given patentable weight because it results in a structure that Schreiner (prior art) does not disclose. The examiner respectfully disagrees. Schreiner sintered skin does results in the same structure (i.e. an insulation layer being applied to the outer surface of the piezoelectric actuator) as affirmed in Schreiner paragraph 0023 which states "A multilayer actuator 1 that has been manufactured according to the process according to the invention is shown in a schematic, much enlarged representation in Fig. 3. It has a circular cross-section 12 and is **fully coated by a sintered skin 17**". Therefore, the argument that the process limitation results in structure that Schreiner does not teach is moot. Therefore, the process limitation has not been given patentable weight.

Regarding the applicant's argument that Schreiner insulation layer is not made from the same material as the piezoelectric layer as the applicant stated in the previous office action Schreiner states (abstract) that the actuators contain a ceramic material

Art Unit: 2834

and that the insulation skin is produced from sintering. It is well-known that sintering ceramic materials is done to assure a tight seal. Therefore, it can be concluded that the insulation skin is indeed made of the same ceramic material that the piezoelectric layers contain since the reason for the two same ceramic materials as stated in the applicant's application (paragraph 0011) is to assure a very tight, integral bond.

Second in the applicants response sent in 04 March 2009 page 8, under The Prior art Rejection, the applicant states "This skin of Schreiner et al. is created as part of the sintering process, but it is formed from the material of the piezoelectric layers of the stack". It appears to the examiner that the applicant is acknowledging that both the piezoelectric material of Schreiner and insulation material are both made from the same piezoelectric material. Therefore, the applicant's arguments that Schreiner does not disclose the piezoelectric layer and insulation layer are made from the same material are moot.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2834

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is (571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on 571-272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/  
Supervisory Patent Examiner, Art Unit 2834

/Bryan P Gordon/  
Examiner, Art Unit 2834